The George Institute for Global Health
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SUBMISSION TO:
National Road Transport Technology Strategy & 2024-27 National Connected and Automated Vehicle Action Plan Consultations
December 2023

About this submission

The George Institute for Global Health is pleased to contribute a written submission to inform the Draft National Road Transport Technology Strategy and the 2024–27 National Connected and Automated Vehicle (CAV) Action Plan. We commend the Australian Government for its efforts in developing a CAV Action Plan due to the substantial health and social benefits that can accrue from appropriate implementation of this form of transport.

The George Institute supports the active consideration of human factors in the implementation of autonomous vehicle technologies. We urge the government to consider how these technologies might affect people's health and well-being. In anticipation of the changes that these technologies are likely to bring, we propose that the government develop proactive initiatives to ensure that the introduction of autonomous vehicles benefits health outcomes and does not exacerbate existing health inequities.

About The George Institute for Global Health

The George Institute is a leading independent global medical research institute with major centres in Australia, China, India, and the UK, and an international network of experts and collaborators.

Our mission is to improve the health of millions of people worldwide, particularly those experiencing disadvantage, by challenging the status quo and using innovative approaches to prevent and treat non-communicable diseases and injury. The George Institute is focused on the global health challenges that cause the greatest loss of life, the greatest impairment of life quality, and the most substantial economic burden, particularly in resource-poor settings.

The George Institute is actively involved in assessing the likely effects of autonomous vehicles on public health, funded by grants from the National Health and Medical Research Council and Australian Research Council. Our work has a particular focus on the conditions that are most likely to result in health harms and the policy levers that will be most effective at optimising public health outcomes.

Acknowledgement of Country

The George Institute acknowledges the Gadigal People of the Eora Nation as the Traditional Custodians of the land on which our Australia office is built and this submission was written. We pay our respect to Elders past, present, and emerging.

Human transport

The George Institute highly recommends inclusion of the health and well-being of transport users within the **Policy Principle of "improving transport outcomes"**. Transport intersects with health and well-being along numerous vectors, and substantial benefits can be gained from ensuring transport systems optimise health outcomes wherever possible. Similarly, the **Policy Principle of undertaking "evidence-based investments**" should consider evidence from across relevant policy areas, including health, and avoid a siloed approach.

The George Institute strongly supports the timely introduction of autonomous vehicles (AVs). Our work highlights the potential of AVs to offer enormous public health benefits, including crash reduction, emissions reduction, increased mobility for those unable to dive (e.g., the elderly and disabled), reduced rates of drink-driving, and enhanced safety for vulnerable road users (Booth et al., 2020, 2022; Pettigrew, 2017; Pettigrew et al., 2018).

Consistent with the **Policy Principle of "user-centric implementation"**, it will be especially important to encourage uptake of autonomous vehicles among older adults so they can realise the mobility benefits, which in turn will provide greater access to health services and enable the social interaction that is so important for healthy ageing. Our evidence-based recommendations for practices to encourage use by older adults, who are typically more apprehensive about new technologies, include ensuring autonomous vehicles are suitable for use by this group by making them accessible and practical for those with impaired mobility and providing interactive demonstrations that allow older adults to trial this new form of transport (Booth et al., 2022).

There are also potential disbenefits to the widescale use of autonomous vehicles that require careful anticipation via appropriate regulatory interventions. Access to this new convenient and ultimately cheaper transport option may result in decreased use of active transport (e.g., walking and cycling) and public transport. Social, cultural, economic, and commercial environments have the greatest influence on our accessible resources and lifestyle choices (Commonwealth of Australia, 2022). Our research with Australian consumers found that 18% of respondents stated they would use AVs for trips they currently walk, 32% would use AVs for trips they currently cycle, and 48% would use AVs for trips they currently complete using public transport (Booth et al., 2019). Australians are generally engaging in more sedentary work, with significant commute times and less physical movement (Commonwealth of Australia, 2022). The cumulative effect of decreased physical movement in addition to other lifestyle choices is an increased risk preventable chronic disease. Strategies to address this issue that were identified by key stakeholders interviewed in our studies include implementing road user charging to discourage car use and developing urban environments that facilitate active transport (Booth et al., 2019; Pettigrew, 2021; Pettigrew et al., 2022).

While we agree there is enormous potential benefit in reduction of human and financial costs with the reduction in crashes that is likely to occur with widespread implementation of CAVs, crashes are unlikely to be completely eliminated (Pilet et al., 2021). The crashworthiness and crash protection systems of vehicles should continue to be a high priority when considering policies related to safety. Moves towards shared transport options also bring potential challenges for continuing high levels of crash protection for some sectors of the population. For example, optimal crash protection for children requires systems that adapt vehicle safety systems to suit the smaller size of children such as dedicated child restraint

systems. Research demonstrates that children are already less likely to be correctly and appropriately restrained when using current ride share models of transport (Koppel et al., 2021). Policy level responses are likely to be critical to ensuring high levels of child passenger protection in current and future ride and vehicle share models of transport (National Academies of Sciences & Medicine, 2023) and ongoing high levels of crash protection for all road users.

Product deliveries

Autonomous technologies are set to transform home delivery systems, enabling faster and cheaper deliveries of a range of products (Booth et al., 2022; Pettigrew, Booth, et al., 2023). This has potential benefits such as enabling efficiencies in the delivery network and increasing the accessibility of goods to those with impaired mobility and in remote locations (Pettigrew, Farrar, et al., 2023).

The expansion of home delivery services also presents health-related challenges. For example, if these systems are used to deliver alcohol they are likely to increase the accessibility and affordability of alcohol (Pettigrew, Booth, et al., 2023), both of which are linked to greater levels of alcohol-related injury and disease (Burton et al., 2017). The Foundation for Alcohol Research and Education reported that more than 70% of women who disclosed domestic violence incidents reported high alcohol consumption at home had been a factor (Lewis, 2023). To minimise harms resulting from the autonomous delivery of alcohol, delivery systems need to fulfill responsible service obligations and avoid delivering alcohol to underage or intoxicated persons or risk serious penalties (Pettigrew, Booth, et al., 2023). Autonomous technologies are also likely to make delivered meal options more affordable and convenient. A longitudinal study led by researchers at The George Institute found that over a five-year period in 10,000 households, processed foods accounted to 55% of total energy consumed and were driven by convenience, affordability, and also heavily marketed and promoted by food retailers (Coyle et al., 2022). As the majority of delivered food options tend to be unhealthy, access to autonomous deliveries is likely to contribute to poorer diets and increased rates of obesity (Pettigrew, Farrar, et al., 2023). Potential strategies to mitigate these issues include applying charges to the delivery of unhealthy foods and restricting where deliveries can be made (e.g., banning deliveries to schools).

We recently surveyed a representative sample of Australians to gauge their support for regulating the autonomous delivery industry (findings currently under second review). Two-thirds of respondents supported limits on autonomous delivery bots operating on streets and prioritising autonomous delivery services for people with disabilities. Half of respondents supported limits on the hours of operation for autonomous delivery services and bans on advertising unhealthy products on automated delivery vehicles. Only small proportions of respondents disagreed with these potential regulations.

Our interviews with key stakeholders have also highlighted the importance of regulating the commercial use of data captured by cameras located on delivery vehicles. It will be critical for appropriate regulations to be introduced prior to the widescale use of such services.

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